

CLAIMS:

1. An improved vehicle wheel alignment system having a central processing unit for controlling the operation of the vehicle wheel alignment system, the improvement comprising:

a communications interface including at least one contact microphone adapted to receive one or more acoustic signals from a vibration transmitting anatomical structure associated with an operator, said at least one contact microphone is configured to produce a data signal representative of said one or more acoustic signals for communication to said central processing unit.

2. The improved vehicle wheel alignment system of Claim 1 wherein said vibration transmitting anatomical structure is adjacent said operator's ear, and said at least one contact microphone disposed in skin contact adjacent said operator's ear.

3. The improved vehicle wheel alignment system of Claim 1 wherein said vibration transmitting anatomical structure is adjacent said operator's larynx, and said at least one contact microphone disposed in skin contact with said operator's throat.

4. The improved vehicle wheel alignment system of Claim 1 wherein said improvement further comprises the central processing unit configured with at least one software object adapted to process said data signal to identify one or more discrete spoken commands; and

wherein the central processing unit is configured responsive to said software object to control the operation of at least one component of the wheel alignment system in response to said identified one or more spoken commands.

5. The improved vehicle wheel alignment system of Claim 4 wherein said at least one software object is configured to utilize VoiceXML standards.

6. The improved vehicle wheel alignment system of Claim 4 wherein said one or more discrete spoken commands each include a predetermined preface.

7. The improved vehicle wheel alignment system of Claim 4 wherein each of said one or more discrete spoken commands are phonetically distinct.

8. The improved vehicle wheel alignment system of Claim 1 wherein said communications interface is further configured to communicate said data signal to the central processing unit via a wireless communications link.

9. The improved vehicle wheel alignment system of Claim 8 wherein said communications interface is further configured to communicate said data signal to the central processing unit utilizing a Bluetooth communication protocol.

10. The improved vehicle wheel alignment system of Claim 1 wherein said communications interface is further configured to receive an output signal from said central processing unit; and wherein said communications interface further includes at least one speaker configured to convert said received output signal to an audio signal.

11. The improved vehicle wheel alignment system of Claim 10 wherein said output signal includes audio data associated with a vehicle wheel alignment procedure.

12. The improved vehicle wheel alignment system of Claim 1 wherein said at least one contact microphone is further configured with an acoustic filter, said acoustic filter configured to filter said acoustic signals.

13. The improved vehicle wheel alignment system of Claim 12 wherein said acoustic filter is configured responsive to vocal acoustic signals.

14. The improved vehicle wheel alignment system of Claim 12 wherein an actuating switch is associated with said acoustic filter.

15. The improved vehicle wheel alignment system of Claim 1 wherein said communications interface further includes at least one air conductive microphone adapted to receive one or more acoustic signals through an air interface, said at least one air conductive microphone configured to produce a second data signal representative of said one or more acoustic signals for communication to said central processing unit.

16. The improved vehicle wheel alignment system of Claim 15 wherein said at least one contact microphone is adapted to acquire low frequency acoustic signals; and wherein said at least one air conductive microphone is adapted to acquire wideband acoustic signals.

17. The improved vehicle wheel alignment system of Claim 15 wherein the improvement further comprises the central processor configured with at least one software object adapted to process said data signal to identify the presence of operator speech;

wherein said software object is further adapted to process a corresponding portion of said second data signal responsive to a presence of operator speech to identify one or more spoken commands; and

wherein the central processing unit is further configured responsive to said software object to control the operation of at least one component of the wheel alignment system in response to said identified one or more spoken commands.

18. The improved vehicle wheel alignment system of Claim 17 wherein said at least one software object is configured to utilize VoiceXML standards.

19. The improved vehicle wheel alignment system of Claim 17 wherein said one or more discrete spoken commands each include a predetermined preface.

20. The improved vehicle wheel alignment system of Claim 17 wherein each of said one or more discrete spoken commands are phonetically distinct.

21. The improved vehicle wheel alignment system of Claim 15 wherein said communications interface is further configured to communicate said second data signal to the central processing unit via a wireless communications link.

22. The improved vehicle wheel alignment system of Claim 1 wherein said communications interface is wearable by an operator.

23. The improved vehicle wheel alignment system of Claim 22 wherein said communications interface is incorporated within a headset.

24. A method for controlling operation of a vehicle wheel alignment system including a central processing system configured to control one or more components of the vehicle wheel alignment system, comprising:

acquiring one or more voice signals from an operator, each of said one or more voice signals including one or more spoken words;

communicating said one or more voice signals to the central processor;

extracting, from said communicated one or more voice signals, one or more spoken words from an operator corresponding to at least one command; and

executing at said central processor, said extracted at least one voice command.

25. The method of Claim 24 for controlling operation of a vehicle wheel alignment system wherein the step of acquiring includes acquiring a low frequency voice signal through a contact microphone; and simultaneously acquiring a wideband voice signal through an air interface microphone.

26. The method of Claim 24 for controlling operation of a vehicle wheel alignment system wherein said extracting step includes utilizing said low frequency voice signal to identify the presence of one or more spoken words from the operator; and utilizing said wideband voice signal to associate one or more voice commands with said one or more spoken words.

27. An improved vehicle wheel alignment system having a central processing unit for controlling the operation of the vehicle wheel alignment system, the improvement comprising:

a communications interface including at least one contact microphone adapted to receive one or more acoustic signals from a vibration transmitting anatomical structure associated with an operator, said at least one contact microphone configured to produce a first signal representative of said received acoustic signals;

at least one air conductive microphone adapted to receive one or more acoustic signals through an air interface, said at least one air conductive microphone configured to produce a second signal representative of said received acoustic signals; an audio processor module configured to receive said first and second signals and to provide an output data signal representative of voice input to said central processing unit.

28. The improved vehicle wheel alignment system of Claim 27 wherein said audio processor module is further adapted to utilize said first signal and said second signal to clarify voice data received from an operator.

29. The improved vehicle wheel alignment system of Claim 28 wherein said output data signal is representative of said clarified voice data.

30. The improved vehicle wheel alignment system of Claim 27 wherein said vibration transmitting anatomical structure is adjacent said operator's ear, and said at least one contact microphone is disposed in skin contact adjacent said operator's ear.

31. The improved vehicle wheel alignment system of Claim 27 wherein said vibration transmitting anatomical structure is adjacent said operator's larynx, and said at least one contact microphone is disposed in skin contact with said operator's throat.

32. The improved vehicle wheel alignment system of Claim 27 wherein said improvement further comprises the central processing unit configured with at least one software object adapted to process said output data signal to identify one or more discrete spoken commands; and

wherein the central processing unit is configured responsive to said software object to control the operation of at least one component of the wheel alignment system in response to said identified one or more spoken commands.

33. The improved vehicle wheel alignment system of Claim 27 wherein said communications interface is further configured to communicate said output data signal to the central processing unit via a wireless communications link.

34. The improved vehicle wheel alignment system of Claim 27 wherein said communications interface is further configured to receive an output signal from said

central processing unit; and wherein said communications interface further includes at least one speaker configured to convert said received output signal to an audio signal.

35. The improved vehicle wheel alignment system of Claim 34 wherein said output signal includes audio data associated with a vehicle wheel alignment procedure.